WE CLAIM:

1. A method of imaging internal structures of a highly turbid medium, the method comprising steps of:

imaging the internal structures at each one of a set of at least two predetermined wavelengths, to generate a corresponding set of respective images; and

merging the set of images to generate a corresponding fused image.

2. A method as claimed in claim 1, wherein the step of imaging the internal structures is based on temporal point spread function (TPSF) analysis of light emerging from the turbid medium.

3. A method as claimed in claim 2, wherein each of the predetermined wavelengths is selected based on optical absorption properties of at least one internal structure of turbid media.

4. A method as claimed in claim 1, wherein, when the number of wavelengths is at most three, the step of merging the set of images comprises steps of:

rendering each image in a respective different primary display color of a color display monitor; and

simultaneously displaying the rendered images on the color display monitor to generate the fused image.

5. A method as claimed in claim 1, wherein, when the number of wavelengths is at most two, the step of merging the set of images comprises steps of:

rendering each image in a predetermined common primary display color of a color display monitor to generate respective rendered images; and

subtracting the rendered images to generate the fused image.

6. A method as claimed in claim 1, wherein, when the number of wavelengths is at most two, the step of merging the set of images comprises steps of:

rendering each image in a predetermined common primary display color of a color display monitor to generate respective rendered images; and

averaging the rendered images to generate the fused image.

7. A method as claimed in claim 1, wherein, when the number of wavelengths is two or more, the step of merging the set of images comprises steps of:

calculating a KL transform of each image to generate respective transformed images;

selecting at most three of the transformed images based on a respective energy of each image;

rendering each selected transformed image in a respective different primary display color of a color display monitor; and

simultaneously displaying the rendered images on the color display monitor to generate the fused image.

8. A method as claimed in claim 7, wherein the step of selecting at most three of the transformed images comprises a step of selecting transformed images having a highest energy level.

9. A method of biomedical optical imaging, the method comprising steps of:

imaging internal structures of a tissue sample at each one of a set of at least two predetermined wavelengths, to generate a corresponding set of respective images; and

merging the set of images to generate a corresponding fused image.

10. A method as claimed in claim 9, wherein the step of imaging the internal structures is based on temporal point spread function (TPSF) analysis of light emerging from the tissue sample.

11. A method as claimed in claim 9, wherein each of the predetermined wavelengths is selected based on optical absorption properties of at least one internal structure of turbid media.

12. A method as claimed in claim 11, wherein the tissue sample is breast tissue, and the set of predetermined wavelengths comprises any one or more of: 755, 800, 930 and 975 nm.

13. A method as claimed in claim 9, wherein, when the number of wavelengths is at most three, the step of merging the set of images comprises steps of:

rendering each image in a respective different primary display color of a color display monitor; and

simultaneously displaying the rendered images on the color display monitor to generate the fused image.

14. A method as claimed in claim 9, wherein, when the number of wavelengths is at most two, the step of merging the set of images comprises steps of:

rendering each image in a predetermined common primary display color of a color display monitor to generate respective rendered images;

subtracting the rendered images to generate the fused image.

15. A method as claimed in claim 9, wherein, when the number of wavelengths is at most two, the step of merging the set of images comprises steps of:

rendering each image in a predetermined common primary display color of a color display monitor to generate respective rendered images;

averaging the rendered images to generate the fused image.

16. A method as claimed in claim 9, wherein, when the number of wavelengths is two or more, the step of merging the set of images comprises steps of:

calculating a KL transform of each image to generate respective transformed images;

selecting at most three of the transformed images based on a respective energy of each image;

rendering each selected transformed image in a respective different primary display color of a color display monitor; and

simultaneously displaying the rendered images on the color display monitor to generate the fused image.

17. A method as claimed in claim 16, wherein the step of selecting at most three of the transformed images comprises a step of selecting transformed images having a highest energy level.

18. An optical imaging apparatus for imaging internal structures of a highly turbid medium, the apparatus comprising:

an optical source providing light at a plurality of wavelengths;

means for injecting said light into said medium and for recovering detection light from said medium;

means for detecting said detection light to generate raw data corresponding to said plurality of wavelengths; and

means for processing said raw data to generate an image benefiting from information gained from said plurality of wavelengths, wherein said apparatus performs the method according to any one of claims 1 to 17.